

What is claimed is:

1. An ink-jet recording medium comprising:  
a support; and  
an ink receiving layer disposed on the support, the ink receiving layer containing at least fine polymer particles and having a porous structure,  
wherein the ink receiving layer has a pore volume per unit thickness (A/B) of  $2.0 \times 10^{-5} \text{ ml/cm}^2/\mu\text{m}$  or more,  
wherein A is a pore volume ( $\times 10^{-5} \text{ ml/cm}^2$ ) in the ink receiving layer at a pore diameter equal to an average particle diameter of the fine polymer particles, the pore volume being determined based on a pore distribution curve obtained according to a nitrogen gas adsorption technique; and  
B is a dry thickness ( $\mu\text{m}$ ) of the ink receiving layer.
2. An ink-jet recording medium according to claim 1, wherein the pore volume A in the ink receiving layer at the pore diameter equal to the average particle diameter of the fine polymer particles is  $50 \times 10^{-5} \text{ ml/cm}^2$  or more.
3. An ink-jet recording medium according to claim 1, wherein second particles of the fine polymer particles constitute the porous structure of the ink receiving layer.

4. An ink-jet recording medium according to claim 1,  
wherein a ratio of Y to X  $[(Y/X) \times 100]$  is 65% or more,  
wherein Y is a pore diameter (nm) at a maximum peak  
of the pore volumes in the ink receiving layer, the pore diameter  
being determined based on a pore distribution curve obtained  
according to a nitrogen gas adsorption technique; and  
X is an average particle diameter (nm) of the fine  
polymer particles.

5. An ink-jet recording medium according to claim 1,  
wherein the pore diameter Y is 33 nm or more, where Y is the pore  
diameter corresponding to a maximum peak of a pore volumes of  
secondary particles of the fine polymer particles in the ink receiving  
layer, the pore diameter being determined based on a pore  
distribution curve obtained according to a nitrogen gas adsorption  
technique.

6. An ink-jet recording medium according to claim 1,  
wherein a content of the fine polymer particles is 50% by mass or  
more of solid contents in the ink receiving layer.

7. An ink-jet recording medium according to claim 1,  
wherein the fine polymer particles have an average particle  
diameter of 10 to 100 nm.

8. An ink-jet recording medium according to claim 1, wherein the ink receiving layer further contains a water-soluble resin.

9. An ink-jet recording medium according to claim 8, wherein the water-soluble resin is at least one of poly(vinyl alcohol) resins, cellulosic resins, resins having an ether bond, resins having a carbamoyl group, resins having a carboxyl group, and gelatin substances.

10. An ink-jet recording medium according to claim 9, wherein the poly(vinyl alcohol) resins are partially saponified poly(vinyl alcohol)s.

11. An ink-jet recording medium according to claim 10, wherein the partially saponified poly(vinyl alcohol)s have a degree of saponification of 65% to 90%.

12. An ink-jet recording medium according to claim 8, wherein a mass ratio of the fine polymer particles to the water-soluble resin in the ink receiving layer is from 4:1 to 20:1.

13. An ink-jet recording medium according to claim 8, wherein a content of the water-soluble resin is 4% to 25% by mass of total solids in the ink receiving layer.

14. An ink-jet recording medium according to claim 1, wherein the ink receiving layer further contains a crosslinking agent.

15. An ink-jet recording medium according to claim 1, wherein the ink receiving layer further contains a mordant.

16. An ink-jet recording medium according to claim 1, wherein the ink receiving layer has a dry thickness of 10 to 100  $\mu\text{m}$ .

17. An image forming method comprising the step of:  
applying an ink to an ink receiving layer of an ink-jet recording medium so as to form an image,

wherein the ink-jet recording medium comprises:

a support; and

the ink receiving layer disposed on the support, the ink receiving layer containing at least fine polymer particles and having a porous structure,

wherein the ink receiving layer has a pore volume per unit thickness (A/B) of  $2.0 \times 10^{-5} \text{ ml/cm}^2/\mu\text{m}$  or more,

wherein A is a pore volume ( $\times 10^{-5} \text{ ml/cm}^2$ ) of the ink receiving layer at a pore diameter equal to the average particle diameter of the fine polymer particles, the pore volume being determined based on a pore distribution curve obtained according

to a nitrogen gas adsorption technique; and

B is a dry thickness ( $\mu\text{m}$ ) of the ink receiving layer.

18. An image forming method according to claim 17, wherein a ratio of Y to X  $[(Y/X) \times 100]$  in the ink-jet recording medium is 65% or more,

wherein Y is a pore diameter (nm) at a maximum peak of the pore volumes in the ink receiving layer, the pore diameter being determined based on a pore distribution curve obtained according to a nitrogen gas adsorption technique; and

X is an average particle diameter (nm) of the fine polymer particles.

19. An image forming method according to claim 17, wherein the pore diameter Y in the ink-jet recording medium is 33 nm or more, where Y is the pore diameter corresponding to a maximum peak of a pore volume of secondary particles of the fine polymer particles in the ink receiving layer, the pore diameter being determined based on a pore distribution curve obtained according to a nitrogen gas adsorption technique.